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20280	7590	06/12/2006	EXAMINER	
MOTOROLA INC 600 NORTH US HIGHWAY 45 ROOM AS437 LIBERTYVILLE, IL 60048-5343			PIZIALI, JEFFREY J	
			ART UNIT	PAPER NUMBER
			2629	

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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Applicant(s)	Applicant(s)
	10/769,258	CAINE ET AL.
	Examiner	Art Unit
	Jeff Piziali	2629

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 30 January 2004 and 21 April 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-22 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-22 is/are rejected.
- 7) ☒ Claim(s) 4 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 21 April 2005 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>30 January 2004</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Specification

1. The abstract of the disclosure is objected to because 37 C.F.R. § 1.72(b) requires, "A brief abstract of the technical disclosure in the specification must commence on a separate sheet, preferably following the claims, under the heading 'Abstract' or 'Abstract of the Disclosure.'" At present, the abstract lacks an appropriate 'Abstract' or 'Abstract of the Disclosure' heading. Instead, the present heading appears to be title of the invention. This title (at the top of Page 17 of the instant specification) should be deleted and replaced with the heading 'Abstract' or 'Abstract of the Disclosure.' Correction is required. See MPEP § 608.01(b).

Drawings

2. The drawings received on 21 April 2005 (replacing the originally submitted drawings) are objected to as failing to comply with 37 CFR 1.84(p)(5) because they include the following reference character not mentioned in the description: Figure 4B's "252."

On a related note, page 9, line 3 of the instant specification refers to "**multiple keys 250.**" The examiner presumes this is simply a typo, and that the applicants did not intend to use reference numeral 250 to refer to both a "keypad" and "multiple keys." Judging by the rest of the written disclosure and the reference character labeling of other illustrations, it appears as though this section of the specification should be changed to "**multiple keys 252.**"

Corrected drawing sheets in compliance with 37 CFR 1.121(d), or amendment to the specification to add the reference character in the description in compliance with 37 CFR

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1.121(b) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicants will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Objections

3. Claim 4 is objected to because of the following informalities: line 2 should be changed from "one or more set of prestored instructions" to "one or more sets of prestored instructions." Appropriate correction is required.

Claim Rejections - 35 USC § 112

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

5. Claims 11-14 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

6. The term "proximate" in claim 11 (see line 4) is a relative term which renders the claim indefinite. The term "proximate" is not defined by the claim, the specification does not provide a

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standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention. It would be unclear to one of ordinary skill in the art precisely how physically close the *switches* must be to the *contact surface corners* before qualifying as being "proximate" to one another.

7. Claims 12-14 are rejected under 35 U.S.C. 112, second paragraph, as simply being dependent upon corresponding rejected base claims.

Claim Rejections - 35 USC § 102

8. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

9. Claims 1-3, 5-8, and 11-20 are rejected under 35 U.S.C. 102(b) as being anticipated by Swanson (US 6,541,715 B2).

Regarding claim 1, Swanson discloses a keypad [Fig. 1; 6] comprising: one or more keys [Figs. 1 & 2; 10], each key being associated with a primary input selection [Fig. 2; numeric characters "1-9" -- for instance] and three or more secondary input selections [Fig. 2; alphabetic characters "A-Z" -- for instance] (see Column 4, Line 48 - Column 5, Line 24), wherein each secondary input selection is associated with a corresponding one of a plurality of switches [Fig. 3; 21-24 -- wherein reference numeral 24 seems not to be illustrated]; and a selection indicator [i.e. "microprocessor" -- which seems not to be illustrated] coupled to the plurality of switches

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and adapted for detecting one of a primary input selection and a secondary input selection, when the key is actuated, wherein one of the secondary input selections [Fig. 2; alphabetic characters "J, K, I, L" -- for instance] is indicated when only a corresponding one of the plurality of switches [Fig. 3; 21-24 -- wherein reference numeral 24 seems not to be illustrated] is engaged (see Column 3, Lines 38-51), when the key is actuated, and a primary input selection [Fig. 2; numeric character "5" -- for instance] is indicated when any combination of more than one of the plurality of switches are engaged, when the key is actuated (see Column 3, Line 52 - Column 4, Line 2).

Regarding claim 2, Swanson discloses the selection indicator is adapted for indicating a primary input selection when the combination of more than one of the plurality of switches are engaged, substantially simultaneously (i.e. concurrently), when the key is actuated (see Column 3, Lines 54-65).

Regarding claim 3, Swanson discloses said selection indicator includes a processor [i.e. "microprocessor" -- which seems not to be illustrated] coupled to the plurality of switches of the one or more keys (see Column 3, Lines 54-65).

Regarding claim 5, Swanson discloses the one or more primary input selections associated with each of the one or more keys substantially include numeric characters [Fig. 2; numeric characters "1-9" -- for instance] (see Column 4, Line 48 - Column 5, Line 24).

Regarding claim 6, Swanson discloses the primary input selections are primarily associated with number entry [Fig. 2; numeric characters "1-9" -- for instance] (see Column 4, Line 48 - Column 5, Line 24).

Regarding claim 7, Swanson discloses the three or more secondary input selections associated with each of the one or more keys substantially include non-numeric characters [Fig. 2; alphabetic characters "A-Z" -- for instance] (see Column 4, Line 48 - Column 5, Line 24).

Regarding claim 8, Swanson discloses the secondary input selections are primarily associated with text entry [Fig. 2; alphabetic characters "A-Z" -- for instance] (see Column 4, Line 48 - Column 5, Line 24).

Regarding claim 11, Swanson discloses each of the one or more keys includes a contact surface [Figs. 2 & 3; 11-14] having a plurality of comers, wherein each of the plurality of switches corresponding to each of the secondary input selections are located proximate a corresponding one of the comers of the contact surface (see Column 3, Lines 18-37).

Regarding claim 12, Swanson discloses the contact surface for at least some of the one or more keys is a triangular shape (i.e. pyramidal shape), having three comers (see Figs. 3 & 4; Column 2, Lines 62-67).

Regarding claim 13, Swanson discloses the orientations in one or more directions of adjacent ones of the one or more keys are not aligned (see Figs. 1 & 4 -- wherein when one of a key member's facets 11-14 is depressed, inherently adjacent keys are not perfectly aligned).

Regarding claim 14, Swanson discloses adjacent ones of the one or more keys having a triangular shape (i.e. pyramidal shape) are oriented in opposite directions (see Figs. 1, 3 & 4; Column 2, Lines 62-67 -- wherein with the "#1" key's facet 13 pressed to the upper-left and the "#2" key's facet 11 pressed to the lower-right, inherently these two adjacent pyramidal/triangular keys would be oriented in opposite directions).

Regarding claim 15, Swanson discloses said keypad is incorporated as part of a portable electronic device (see Column 2, Lines 55-61).

Regarding claim 16, Swanson discloses said portable electronic device is a wireless communication device (see Column 2, Lines 55-61).

Regarding claim 17, Swanson discloses said wireless communication device is a cellular telephone (see Column 2, Lines 55-61).

Regarding claim 18, this claim is rejected by the reasoning applied in rejecting claims 1 and 15; furthermore Swanson discloses an electronic device (see Column 2, Lines 55-61) with a keypad [Fig. 1; 6] comprising: a key [Figs. 1 & 2; 10] associated with a primary character [Fig.

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2; numeric character "5" -- for instance] having a first contact [Fig. 3; 21] associated with a first secondary character [Fig. 2; alphabetic character "J" -- for instance], a second contact [Fig. 3; 22] associated with a second secondary character [Fig. 2; alphabetic character "K" -- for instance], and a third contact [Fig. 3; 23] associated with a third secondary character [Fig. 2; alphabetic character "I" -- for instance] (see Column 4, Line 48 - Column 5, Line 24); wherein closure of only one of the first contact, the second contact and the third contact during a predetermined time [i.e. when the device is operatively powered on, for instance] period enters the associated secondary character into the electronic device (see Column 3, Lines 38-51); and wherein closure of two or more of the first contact, the second contact and the third contact during the predetermined time period enters the primary character into the electronic device (see Column 3, Line 52 - Column 4, Line 2).

Regarding claim 19, this claim is rejected by the reasoning applied in rejecting claim 1; furthermore Swanson discloses a method of detecting the selection of one of a plurality of key inputs associated with a single key [Figs. 1 & 2; 10], where said key actuations include a primary input selection [Fig. 2; numeric character "5" -- for instance] and three or more secondary input selections [Fig. 2; alphabetic characters "J, K, I, L" -- for instance], said method comprising: monitoring [via a "microprocessor"] the state of three or more switches [Fig. 3; 21-24 -- wherein reference numeral 24 seems not to be illustrated] each associated with a corresponding one of the three or more secondary input selections; detecting a key actuation; if only one of the switches is engaged when the key actuation is detected, indicating the selection of the secondary input corresponding to the engaged switch (see Column 3, Lines 38-51); and if any combination of a

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plurality of switches is engaged, when the key actuation is detected, indicating the selection of the primary input (see Column 3, Line 52 - Column 4, Line 2).

Regarding claim 20, this claim is rejected by the reasoning applied in rejecting claim 2.

Claim Rejections - 35 USC § 103

10. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

11. Claims 4, 9, 10, 21, and 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Swanson (US 6,541,715 B2) in view of Kato et al (US 6,356,258 B1 -- hereafter referred to as *Kato*).

Regarding claim 4, although it's arguable Swanson's hand-held computer (aka cellular phone) and microprocessor must inherently comprise at least one memory element to attain any sort of real-world functionality; Swanson does not expressly disclose that said keypad further comprises a memory element for storing one or more set of prestored instructions used by the processor in detecting the selection of a primary input and a secondary input.

However, Kato does disclose a keypad [Fig. 1; 2] comprising a memory element [Fig. 3; 103] (see Column 1, Lines 30-37; Column 17, Lines 52-58; and Column 31, Lines 3-11) for storing one or more set of prestored instructions used by a processor [Fig. 3; 102] in detecting a selection of a primary input [Fig. 1; numeric character "7" for instance] and a secondary input

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[Fig. 1; alphabetic characters "KGF" for instance] (see Column 16, Lines 30-36). Swanson and Kato are analogous art, because they are from the shared inventive field of multifunction alphanumeric buttons for keypads. Therefore, it would have been obvious to one having ordinary skill in the art at the time of invention to integrate Kato's memory element into Swanson's keypad device, so as to set the processor to properly execute its desired function(s) when in operation (see Kato: Column 17, Lines 39-58).

Regarding claim 9, Swanson discloses a text entry mode, wherein when in text entry mode the primary input selections for the one or more keys substantially include numeric characters [Fig. 2; numeric characters "1-9" -- for instance] and the secondary input selections for the one or more keys substantially include non-numeric characters [Fig. 2; alphabetic characters "A-Z" -- for instance] (see Column 4, Line 48 - Column 5, Line 24). However, Swanson does not expressly disclose a number entry mode.

However, Kato does disclose a mode selector [Fig. 3; 103] coupled to a selection indicator [Fig. 3; 102], said mode selector adapted for distinguishing between a number entry mode ["numeric input mode"] and a text entry mode ["English input mode" for instance] (see Column 18, Lines 64-67), wherein when in number entry mode a secondary input selection [Fig. 1; alphabetic characters "KGF" for instance] detected for at least one of the one or more keys will be replaced by the corresponding primary input [Fig. 1; numeric character "7" for instance] (see Column 17, Lines 51-59). Therefore, it would have been obvious to one having ordinary skill in the art at the time of invention to integrate Kato's selectable number entry mode into Swanson's keypad device, so as to realize a highly versatile keyboard input apparatus adaptable

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to various input modes, and thereby improve manipulation and numeric input operation (see Kato: Column 6, Lines 4-15).

Regarding claim 10, Swanson discloses one or more of the secondary input selections for at least one or more of the one or more keys is associated with multiple different input selections [Fig. 2; 14 punctuation symbols "?" and "/" -- for instance], wherein detecting the selection of the secondary input selection associated with multiple different input selections selects a first one of the associated multiple secondary input selections (see Column 5, Lines 25-31). Swanson also discloses detection of repeated sequential selections of inputs associated with multiple different input selections cycles through input selections (see Column 1, Lines 18-27). Swanson does not expressly disclose detection of repeated sequential selections of the secondary input selection associated with multiple different input selections cycles the original input selection between the associated multiple secondary input selections.

However, Kato does disclose one or more of the secondary input selections [Fig. 1; alphabetic characters "KGF"] for at least one or more of the one or more keys [Fig. 1; 2] is associated with multiple different input selections (see Column 14, Lines 35-42), wherein detecting the selection of the secondary input selection associated with multiple different input selections selects a first one [Fig. 5; "K"] of the associated multiple secondary input selections, and wherein detection of repeated sequential selections of the secondary input selection associated with multiple different input selections cycles the original input selection between the associated multiple secondary input selections [Fig. 5; "G" and "K"] (see Column 18, Line 64 - Column 19, Line 10). Therefore, it would have been obvious to one having ordinary skill in the

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art at the time of invention to integrate Kato's input selection cycling functionality/method into Swanson's keypad device, so as to further miniaturize the key input apparatus while making key manipulation easy to remember and improving operability (see Kato: Column 19, Lines 39-67).

Regarding claim 21, this claim is rejected by the reasoning applied in rejecting claim 9.

Regarding claim 22, this claim is rejected by the reasoning applied in rejecting claim 10.

12. Claims 12-14 are further rejected under 35 U.S.C. 103(a) as being unpatentable over Swanson (US 6,541,715 B2) in view of Yu et al (US 5,852,414 A -- hereafter referred to as *Yu*).

Regarding claim 12, Swanson discloses the contact surface for at least some of the one or more keys is a triangular shape (i.e. pyramidal shape), having three corners (see Figs. 3 & 4; Column 2, Lines 62-67). However, in the event that it is shown that the applied prior art of Swanson does not disclose the claimed triangular shaped keys with sufficient specificity, the invention is obvious because the prior art of Yu specifically discloses this claimed subject matter.

More particularly, Yu discloses a contact surface for at least some of one or more keys is a triangular shape, having three corners (see Fig. 2; Column 1, Line 54 - Column 2, Line 14). Swanson (US 6,541,715 B2) and Yu are analogous art, because they are from the shared inventive field of multifunction alphanumeric buttons for keypads. Therefore, it would have been obvious to one having ordinary skill in the art at the time of invention to replace Swanson's pyramidal shaped keys with Yu's triangular shaped keys, so as to eliminate stress in searching for

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the next character in a data string via a simplified 10-keypad structure (see Yu: Column 1, Lines 25-37).

Regarding claim 13, Swanson discloses the orientations in one or more directions of adjacent ones of the one or more keys are not aligned (see Figs. 1 & 4 -- wherein when one of a key member's facets 11-14 is depressed, inherently adjacent keys are not perfectly aligned). However, in the event that it is shown that the applied prior art of Swanson does not disclose the claimed unaligned triangular shaped keys with sufficient specificity, the invention is obvious because the prior art of Yu specifically discloses this claimed subject matter.

More particularly, Yu discloses the orientations in one or more directions of adjacent ones of the one or more keys are not aligned (see Fig. 2; Column 1, Line 54 - Column 2, Line 14).

Regarding claim 14, Swanson discloses adjacent ones of the one or more keys having a triangular shape (i.e. pyramidal shape) are oriented in opposite directions (see Figs. 1, 3 & 4; Column 2, Lines 62-67 -- wherein with the "#1" key's facet 13 pressed to the upper-left and the "#2" key's facet 11 pressed to the lower-right, inherently these two adjacent pyramidal/triangular keys would be oriented in opposite directions). However, in the event that it is shown that the applied prior art of Swanson does not disclose the claimed oppositely oriented triangular shaped keys with sufficient specificity, the invention is obvious because the prior art of Yu specifically discloses this claimed subject matter.

More particularly, Yu discloses adjacent ones of the one or more keys having a triangular shape are oriented in opposite directions (see Fig. 2; Column 1, Line 54 - Column 2, Line 14).

Conclusion

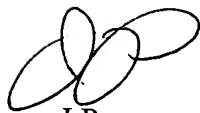
13. The prior art made of record and not relied upon is considered pertinent to applicants' disclosure. Keinonen et al (US 7,048,456 B2), Levy et al (US 7,015,896 B2), Crisan (US 7,014,099 B2), Macor (US 6,948,869 B2), Smallwood (US 6,931,125 B2), Wen (US 6,911,970 B2), Yabusaki (US 6,904,148 B1), Bickerton (US 6,885,318 B2), Bozorgui-Nesbat (US 6,847,706 B2), Kandogan et al (US 6,765,556 B2), Luo (US 6,757,388 B2), Higginson (US 6,703,963 B2), Rapeli (US 6,677,541 B1), Hirshberg (US 6,597,345 B2), Hillmering (US 6,559,778 B1), Abe (US 6,520,699 B2), Luo (US 6,378,234 B1), Chang (US 6,320,942 B1), Grover et al (US 5,818,437 A), Danish (US 5,117,455 A), Lapeyre (US 4,891,777 A), Levasseur (US 4,609,792 A), and Lapeyre (US 4,549,279 A) are cited to further evidence the state of the art pertaining to keypads.

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jeff Piziali whose telephone number is (571) 272-7678. The examiner can normally be reached on Monday - Friday (6:30AM - 3PM).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Bipin Shalwala can be reached on (571) 272-7681. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



J.P.

8 June 2006